

**Summary Minutes of the
U.S. Environmental Protection Agency (EPA)
Clean Air Scientific Advisory Committee (CASAC)
NO_x Review Panel
Public Teleconference
June 5, 2013**

Date and Time: Wednesday, June 5, 2013, 1:00 PM – 4:00 PM ET

Location: By telephone only

Purpose: The purpose of the meeting was to provide consultative advice on the EPA's *Draft Plan for the Development of the Integrated Science Assessment of Nitrogen Oxides – Health Criteria (May 2013 Draft)*

Participants: NO_x Review Panel (for full Panel, see roster¹)

Dr. H. Christopher Frey, CASAC Chair

Mr. George Allen

Dr. Matthew Campen

Dr. Ronald Cohen

Dr. Douglas Dockery

Dr. Philip Fine

Dr. Panos Georgopoulos

Dr. Jack Harkema

Dr. Michael Jerrett

Dr. Joel Kaufman

Dr. Patrick Kinney

Dr. Michael Kleinman

Dr. Timothy Larson

Dr. Jeremy Sarnat

Dr. Richard Schlesinger

Dr. Lianne Sheppard

Dr. Ronald Wyzga

Dr. Jim Zhang

Mr. Aaron Yeow, Designated Federal Office (DFO)

Ms. Lydia Wegman, EPA Office of Air Quality and Planning Standards (OAQPS)

Dr. John Vandenberg, EPA National Center for Environmental Assessment (NCEA)

Other Attendees (See Attachment A)

Opening Remarks

Mr. Aaron Yeow, DFO, opened the meeting. He noted that as required under the Federal Advisory Committee Act (FACA), the Panel's deliberations are held in public with advanced notice given in the Federal Register², and the meeting minutes will be made publicly available after the meeting. He noted that the Panel did not receive any written public comments or requests for oral public comments. He stated that the SAB Staff Office reviewed information provided by the Panel and determined that there

were no issues with conflict-of-interest nor any issues with an appearance of a lack of impartiality for any of the Panel members. He then turned the meeting over to Dr. Christopher Frey, Chair of the CASAC.

Dr. Frey welcomed everyone and had the Panel members introduce themselves. He provided an overview of the Panel's activities over the next few years, an overview of the CASAC charter, the role of a consultation, and an overview of the Agenda³.

EPA Presentation on NAAQS Review

Ms. Lydia Wegman, EPA OAQPS, provided an overview of the EPA's process for reviewing the primary National Ambient Air Quality Standards (NAAQS) for nitrogen dioxide (NO₂)⁴. She presented the Clean Air Act requirements regarding NAAQS and an overview of the review process for the NO₂ Primary NAAQS. Dr. Scott Jenkins, OAQPS, continued the presentation and discussed improving efficiency in the current review of the Primary NO₂ NAAQS, the decisions made in the 2010 review of the Primary NO₂ NAAQS, and the projected schedule for the current review of the Primary NO₂ NAAQS.

A Panel member asked when EPA would make a decision about whether a risk and exposure assessment (REA) would be performed. Ms. Wegman replied that the draft Integrated Review Plan (IRP) will contain EPA's decision regarding this and the Panel will have an opportunity to concur or disagree when they peer review the IRP in November.

EPA Presentation on Draft ISA Plan

Dr. John Vandenberg provided an overview and purpose of the Integrated Science Assessment document. He indicated that the focus of the ISA document is on new studies since the last review through February 2014. He discussed the structure of the ISA document and the Health and Environmental Research Online (HERO) database.

Public Comments on the Draft ISA Plan

There were no public comments so the Panel proceeded to the next item on the agenda.

Discussion of the Draft ISA Plan

Dr. Frey provided some background on the ISA structure, which was refined with CASAC input during reviews of other criteria pollutants. The Panel then proceeded through the draft ISA plan section by section.

Regarding Section 2 of the draft ISA plan, one member commented that the decision on whether to perform a risk assessment is made before the Panel looks at the ISA and that the appropriate place should be after the Panel looks at the ISA and IRP. Dr. Frey indicated that the draft decision on whether to conduct a risk assessment will be in the draft IRP, which will be reviewed by the Panel at the same time as the draft ISA and the Panel will have an opportunity to concur or disagree with the EPA's decision during that review.

For Section 3 of the draft ISA plan, one member sought clarification regarding the use of statistical power in evaluating study quality. Another Panel member commented that there needs to be consistency

between what is looked at in animal toxicological studies and controlled human exposure studies (co-exposures, etc.). One Panel member sought clarification on how EPA will deal with discord between toxicological findings and epidemiological findings. EPA stated that the causality framework discusses how the studies are integrated. Studies are evaluated based on their quality and the strengths and weaknesses of the studies are taken in account when weighting the studies.

Regarding the Content and Organization of the ISA section, one member commented that the relationship between the different compounds within NO_x should be looked at, both in terms of atmospheric chemistry as well as exposure. EPA stated that the relationship between the different species of NO_x will be described in the ISA. For the Exposure subsection, one Panel member stated that there has been an explosion of literature in exposure prediction models since the last NO_x ISA document and that a discussion of exposure prediction modeling is missing in this section. Other Panel members agreed regarding the importance of the exposure prediction modeling. One Panel member noted an imbalance in the degree of specificity in the questions posed throughout the Content and Organization of the ISA section (e.g., very specific questions in the health effects subsection, more general and broad questions in other subsections). One member noted the lack of discussion of time-activity and physical activity in the exposure subsection. There is an emerging literature that indicates this may be a major source of exposure to NO₂. Dr. Frey commented that the ISA should provide information regarding the key uncertainties in the previous review and how that has or has not changed.

For the Air Quality and Atmospheric Chemistry subsection, some Panel members noted that the document is heavily focused on near-road exposures, but that there are other exposures, which include home wood-burning, railyards, etc. Regarding the Dosimetry and Modes of Action subsection, several Panel members had comments that activity and exercise will affect respiration rates and change penetration of pollutants into respiratory tracts and will affect dosimetry and needs to be reflected in this subsection. One Panel member commented that data gaps and limitations to quantitatively comparing mechanisms across species should be identified.

For the Health Effects subsection, one member commented that recently a large number of studies have been published that looked at proximity to roads as an index of traffic exposure and potentially NO₂. Will EPA include these studies or will they be excluded? Modeling of NO₂ exposures are largely based on proximity to roads, so potentially the studies could be used, substituting modeled NO₂ exposure for proximity to roads. This may not be useful in the regulatory standard setting, but could be useful for generating hypotheses. There was some discussion about the weighting of studies performed outside of the United States. There was some discussion about biogenic emissions of NO₂ as well as trends in NO₂ levels. One member started that it is important for this review, to the extent possible, to address confounding with other pollutants. There was some discussion about the need to clarify the relationship between NO₂, NO_x, and other species in terms of which are surrogate and causal agents.

For the At-risk Lifestyles and Populations subsection, one member commented that, due to unequal distributions of risk among populations and unequal distributions of health status, there often is the need to consider cumulative effects of co-exposures.

Dr. Frey discussed the schedule for finalizing the consultation and the next meeting of the Panel.

The meeting was adjourned by Mr. Yeow at 3:50 pm.

Respectfully Submitted:

/Signed/

Mr. Aaron Yeow
Designated Federal Officer
EPA SAB Staff Office

Certified as Accurate:

/Signed/

Dr. H. Christopher Frey
Chair
CASAC

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by Panel members during the course of deliberations within the meeting. Such ideas, suggestions and deliberations do not necessarily reflect consensus advice from the Panel members. The reader is cautioned to not rely on the minutes to represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters or reports prepared and transmitted to the EPA Administrator following the public meetings.

Materials Cited

The following meeting materials are available on the CASAC website: <http://www.epa.gov/casac>, at the [June 5, 2013 CASAC NOx Review Panel Meeting page](#):

¹ CASAC NOx Review Panel Roster

² Federal Register Notice Announcing the Public Meeting

³ Agenda

⁴ Overview of EPA's Process for Reviewing the Primary National Ambient Air Quality Standards (NAAQS) for NO₂

**ATTACHMENT A – Other Attendees
CASAC NOx Review Panel Public Meeting**

Wednesday, June 5, 2013

Name	Affiliation
Brown, James	USEPA
Buckley, Barbara	USEPA
Burkett, Jeff	The Empire District Electric Co.
Curry, Bridgid	USEPA
Deitrich, Casey	CQ Transcriptions
Ethridge, Shannon	Texas Commission on Environmental Quality
Fritz, Patricia	New York State Department of Health
Hines, Erin	USEPA
Jenkins, Scott	USEPA
Jones, Richard	USEPA
Kotchmar, Dennis	USEPA
Langworthy, Cindy	Hunton & Williams LLP
Loften, Anthony	South Carolina Department of Health and Environmental Control
Luben, Tom	USEPA
McCormick, Lindsay	USEPA
McDow, Stephen	USEPA
Nichols, Jennifer	USEPA
Nystrom, Marci	California Air Resources Board
Oakes, Michelle	USEPA
Owens, Beth	USEPA
Parker, Stuart	Inside EPA
Patel, Molini	USEPA
Pinto, Joe	USEPA
Richman, Elise	USEPA
Richmond-Bryant, Jennifer	USEPA
Ross, Mary	USEPA
Sacks, Jason	USEPA
Sams, Reeder	USEPA
Shprentz, Deborah	Consultant to the American Lung Association
Stevens, Tina	USEPA
Svendsgaard, David	USEPA
Watkins, Nealson	USEPA
Young, Brianna	USEPA